

I claim:

1. A method for adjusting the output light properties of a doped optical fiber comprising the steps of:

5 passing a light ray through the fiber;

monitoring the desired property of the light ray exiting the fiber;

10 exposing the multi-mode fiber to means to adjust the refractive properties of the fiber;

stopping refractive change means as soon as desired output light properties are achieved.

2. The method of claim 1 wherein the fiber is a doped fiber and the means to adjust refractive index is exposure to laser radiation.

3. A optical fiber collimating coupler comprising:

15 a single-mode optical fiber;

a length of graded-index multi-mode optical fiber attached to said single-mode fiber;

20 wherein the refractive index of the graded-index multi-mode fiber has been exposed to means to change the refractive properties of the multi-mode fiber.

5 4. Optical fiber collimating coupler according to claim 1 in which the means to
change the refractive properties of the multi-mode fiber comprises an ultra-
violet laser.

10 5. Method of termination of optical fibers comprising the steps of:
removal of protective jacket, ensuring that the underlying cladding is clean;
cleaving a single-mode optical fiber;
cutting a length of graded-index multi-mode optical fiber to a length L which
approximates $B(n + 0.5)$ wherein B is the beat length of the light ray expected
to pass through the multi-mode fiber, and n is any integer;
fusing the multi-mode fiber to the single-mode fiber;
passing a light ray through the single-mode fiber;
monitoring the collimation of the light ray exiting the multi-mode fiber;
exposing the multi-mode fiber to means to adjust the refractive properties of
the multi-mode fiber;
20 stopping refractive change means as soon as optimal beam collimation is
achieved.

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6. Method of coupling an optical fiber to a component of unequal numerical aperture comprising the steps of:

removal of protective jacket of the fiber, ensuring that the underlying cladding is clean;

5 cutting a length of graded-index multi-mode optical fiber to a length L which approximates $B(n + 0.5)$ wherein B is the beat length of the light ray expected to pass through the multi-mode fiber, and n is any integer;

fusing the multi-mode fiber to the single-mode fiber;

passing a light ray through the single-mode fiber;

10 placing the component to be coupled and the fiber assembly in the desired configuration;

monitoring the collimation of the light ray exiting the multi-mode fiber;

15 exposing the multi-mode fiber to means to adjust the refractive properties of the multi-mode fiber;

stopping refractive change means as soon as optimal coupling conditions are achieved .

Legend
- Coupling
- Cladding
- Core
- Protective jacket